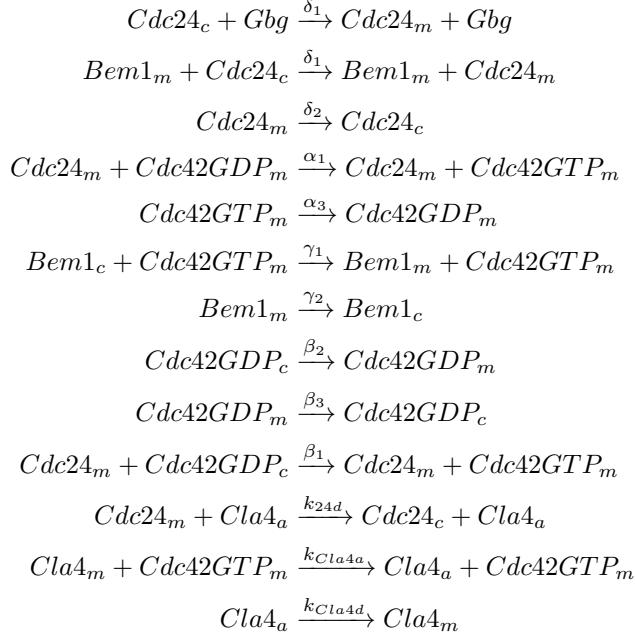


S1 Model Mechanistic model of Cdc42 polarization.



| Parameter | Value | Description | Source |
|-------------|---------------------------|--|------------|
| D_m | $0.0053 \mu m^2 s^{-1}$ | Diffusion constant on membrane | [5] |
| D_c | $50 \mu m^2 s^{-1}$ | Diffusion constant in cytoplasm | See Fig S6 |
| R | $2 \mu m$ | Radius of cell | [5] |
| N_{42} | 3000 | Total number of Cdc42 molecules | [4] |
| N_B | 3000 | Total number of Bem1 molecules | [38] |
| N_{24} | 1000 | Total number of Cdc24 molecules | [4] |
| α_1 | $0.2 \mu m^2 s^{-1}$ | Activation of Cdc42 by Cdc24 (membrane) | [4] |
| α_3 | $1 s^{-1}$ | Deactivation of Cdc42 | [4] |
| β_1 | $0.266 \mu m^3 s^{-1}$ | Activation of Cdc42 by Cdc24 (cytoplasm) | [4] |
| β_2 | $0.28 \mu m s^{-1}$ | Attachment of Cdc42 to membrane | [4] |
| β_3 | $1 s^{-1}$ | Detachment of Cdc42 from membrane | [4] |
| γ_1 | $0.2667 \mu m^3 s^{-1}$ | Bem1 recruitment by Cdc42 | [4] |
| γ_2 | $0.35 s^{-1}$ | Detachment of Bem1 from membrane | [4] |
| δ_1 | $0.00297 \mu m^3 s^{-1}$ | Recruitment of Cdc24 by Gbg | [4] |
| δ_2 | $0.35 s^{-1}$ | Detachment of Cdc24 from membrane | [4] |
| k_{24d} | $0.000033 \mu m^3 s^{-1}$ | Detachment of Cdc24 via Cla4 | [38] |
| k_{Cla4a} | $0.006 s^{-1}$ | Activation of Cla4 by Cdc42 | [38] |
| k_{Cla4d} | $0.01 s^{-1}$ | Deactivation of Cla4 | [38] |